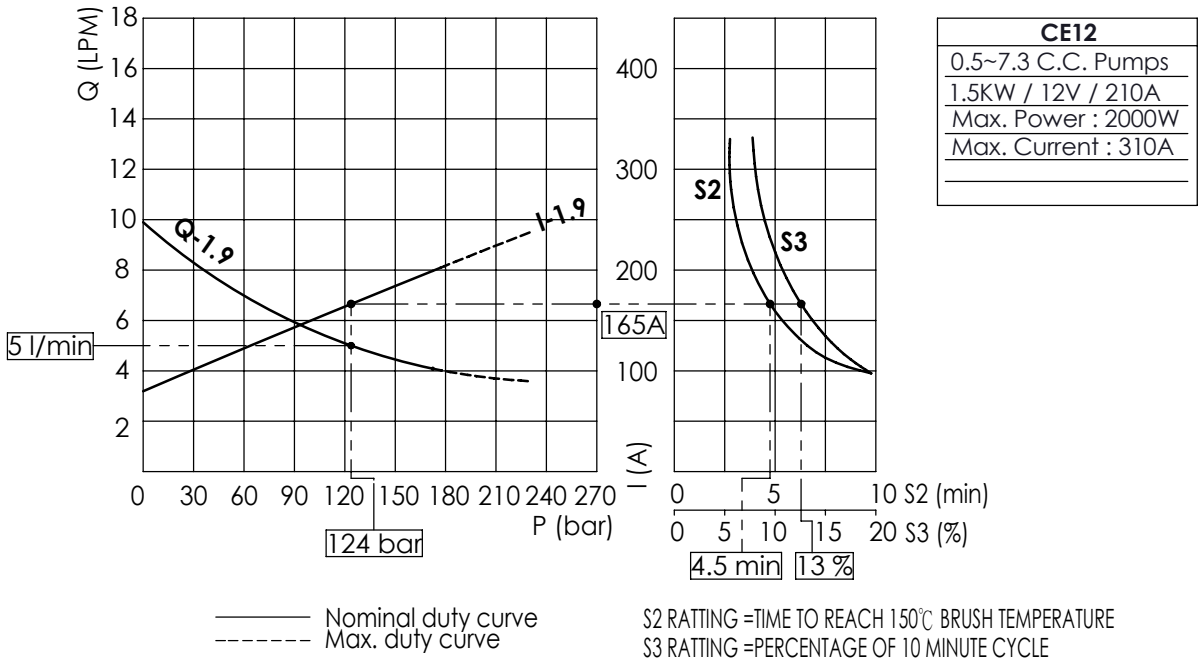
How To Choose D.C. Motor and Pump

The dimensioning of D.C. motors and electro-hydraulic pumps are based on the duty types. In particular the output power depends on the temperature reached by the motor.

When required pressure, flow and available voltage (12 or 24V D.C.) are known, select the motor by checking the diagram below. If a pump displacement is available at the intersection of pressure and flow valves the electrical current can be ontained on the "I" curve.

Example:



CE12
0.5~7.3 C.C. Pumps
1.5KW / 12V / 210A
Max. Power : 2000W
Max. Current : 310A

For this application we have the following data:
flow=5 l/min, max. pressure=124bar, not clearly defined cycle.

Please check the above diagrams and see if there is a pump available. When the intersection point is not on a pump curve, choose the closest intersection pump.

Using a pump of Q-1.9: (a 1.9 c.c./rev pump) On the "I" curve we read that a 165A current is known. With these conditions on the S2/S3 diagram note that :
S2=4.5 minutes ; S3=13%.

If S2 and S3 values are not enough for a required cycle, choose a bigger motor and repeat the calculation on the new motor curves.

Short time-duty type : S2

Operation at constant load, of short duration, without thermal equilibrium being reached. A no load period follows, sufficient for the motor to return to ambient temperature.
Example: S2=4.5minutes
The motor runs continuously for 4.5 minutes, and stops a time sufficient to return to ambient temperature.

Intermittent periodic-duty type : S3
Operations which consist of a sequence of uniform cycles (duty cycle 10 minutes) consisting of a period at constant load and a no load period.
Example: S3=13%
The motor runs 1.3 minutes and stops 8.7 minutes.